

quadrant generating an independent output corresponding to an integration of all the angles of incidence. In both detector configurations, the independent outputs are derived along two orthogonal axes.

The subject invention is directed to an approach for determining the polarizing effects induced by the objective lens which focuses the light on the sample. If these artifacts can be determined, the analysis of the sample can be improved. In accordance with the subject invention, additional information is derived by rotating one of the compensator or the analyzer to obtain a second measurement. Using this second measurement, the processor can treat the lens as an equivalent waveplate at a particular azimuthal angle and retardation value. The effects of this equivalent waveplate can be removed from the analysis of the sample to obtain more accurate results.

In both the first Office Action and the more recent Final Office Action, the Examiner rejected claim 4 based on the patent to Rotter (6,784,991). In the previous response, applicants pointed out that Rotter:

“...does not teach rotating the compensator (waveplate 734), nor does it teach rotating the compensator into ‘two different azimuthal positions in order to determine the changes in the phase in the probe beam induced by the focusing optical element.’ In fact, there is no discussion in Rotter of evaluating the polarization effects of the lens 723.”

In Final Office Action, the Examiner failed to address the argument that Rotter does not disclose evaluating the polarization effects of the lens 723. As noted above, the subject invention, as defined by claim 4, requires that the processor determine the changes in phase of the probe beam induced by the focusing optical element, a concept Rotter simply fails to teach.

The Examiner’s only response to applicants’ argument was that “Rotter discloses phase retardation in the beam and in order to do that it would be inherent that the compensator is rotated.” This is simply wrong. The compensator 734 of Rotter is a quarter-wave plate. A quarter wave plate is made from a birefringent crystal which creates phase differences between two polarization states of the beam. No rotation is necessary for this to occur. Rotation is not disclosed in Rotter and rotation is not inherent. Thus, Rotter completely fails to either anticipate or render obvious the subject matter of claim 4.

In the Office Action, the Examiner rejected claims 5-11 and 13-16 as being anticipated by Opsal (6,678,084), which is assigned to the assignee herein. As the Examiner correctly notes,

the layout of the device in the Opsal patent is quite similar to the layout described herein. Both systems are intended to generate ellipsometric measurements to analyze the sample.


In the Office Action, the Examiner, quoting the last element of claim 5, states that Opsal discloses "a processor (50) for evaluating characteristics of the sample based on the output signals **with said evaluation including accounting for the polarization effects induced by the objective.**" The Examiner is incorrect. There is nothing whatsoever in Opsal which teaches an evaluation which includes an "**accounting for the polarization effects induced by the objective.**" Opsal is directed towards improvements in detector configurations. Opsal was not concerned with and did not discuss the polarization effects of the objective nor did he discuss an approach which might account for this effect.

In view of the above, it is respectfully submitted that the patent to Opsal, which is directed to improved detector configurations and fails to discuss or suggest an evaluation which includes accounting for the polarization effects induced by the focusing objective cannot anticipate or render obvious independent claims 5 and 11. Accordingly, applicants respectfully submit that independent claims 5 and 11 define patentable subject matter and allowance thereof, along with the claims depending therefrom is respectfully solicited.

Respectfully submitted,

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